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**Notes on CALLIGRAPHA and its Allies with
Descriptions of a few New Species.**

BY FRED. C. BOWDITCH.

A study of the Chrysomelids in my collection shows some interesting new forms.

Calligrapha wickhami nov. sp.

Head rufous with two flavous spots near the eyes, antennæ rufous, the club dark, thorax rufous, with the lateral and anterior edges flavous, the former with one dilation inward, the latter with three, the middle one attaining the centre of the thorax which has also two flavous spots on the disk, elytra flavous, the suture very narrowly, a short fork about the scutellum, a subsutural vitta interrupted near the scutel, a vitta on about the third space, also interrupted in front and developed into a hook on the convexity, a humeral and subhumeral stripe and several small spots at the side and behind all dark rufous and all limited by punctures, beneath and legs rufous.

One example Alpine, Texas, 4400-6000 feet. Wickham.

A striking species superficially resembling *Zygogramma exclamationis* Fabr. The thorax is moderately punctured on the disk, coarsely and thickly on the rufous parts of the side, scutel rufous; the flavous part of the elytra is almost devoid of punctures except at the sides and behind where they are few, fine and piceous; the punctured edges of the rufous vittæ, none of which attain the base, have a tendency to be darkened, the fork about the scutel unites with the sutural edge at about the anterior fourth, the subsutural joins it about one-fourth from the apex and is abruptly truncated near the apex, the vitta of the third space is broken at the anterior quarter, and the short end clubbed; just after passing the convexity it is hooked outward, the humeral stripe nearly touches the end of the hook, the subhumeral is short and touches the humeral, there is a small spot between the subhumeral and the edge, a larger one directly behind the subhumeral, four more arranged around the hook, and two small ones in the rear, the epipleuræ are flavous with rufous edges, the edges of the body parts below are more or less picked out with dark.

Probably mixed in collections with *Z. exclamationis*, but the claws at once differentiate it, and the striping differs.

***Calligrapha serpens* nov. sp.**

Head green bronze, labrum yellow, antennæ yellow with dark club, thorax green bronze, coarsely punctate at the sides, sparsely and finely on the disk, deeply foveate on each side, elytra flavous, brown vittate as follows: a narrow sutural vitta, forked at about the centre, forming the vitta of the second interspace, the vitta of the fourth interspace is entire from the base down over the convexity, where it turns outward running nearly parallel to the lateral edge, and forming a long hook reaching to the anterior fourth, at the bottom of the hook, near the outside edge is attached a small supplemental hook, curved inward parallel to the suture, a humeral vitta which is prolonged over the elytra and occupies the centre of the space formed by the hook of the fourth interval and is clubbed at the end, there is a small spot below the humerus and a median one on the edge, body below and epipleuræ, blue green, feet rufous. Length 9 mm.

Two examples, Guanajuato, Mexico.

The sides punctures of the thorax are very coarse and confluent, the edges evenly rounded, the scutel the color of the thorax, the vittæ of the elytra nowhere attain the base, the long hook coupled with the abnormally long humeral stripe easily identify this form. There are a few fine punctures on the side and rear portions of the elytra, all the elytral vittæ are limited by punctures.

There is a form of *Calligrapha lunata* Fabr. where the usual short white inner discal stripe is reduced to an obsolete spot; at the same time the sutural white stripe ends abruptly about 2 mm. from the apex, otherwise it is strictly typical, but unless the ordinary form is at hand it would readily pass as a new species.

One example, Mexico (in green), No. 429 among the unnamed Jacoby material, also one from Marion, Mass.

***Leptinotarsa similis* nov. sp.**

Head and thorax viridi-aeneous bronzed, labrum and antennæ flavous, the latter a trifle darkened at the end, punctures moderate except at the sides of the thorax where they are coarser and somewhat confluent, also a deep fovea on each side, scutel aeneous, elytra pale flavous with the following aeneous markings, a common wedge shaped sutural vitta ending at the middle, a subsutural vitta nearly reaching

the apex and three vittæ (one humeral) between the last and the humerus, ending in an ill-defined oblique streak which runs from below the humerus to the middle, the space between the oblique streak and the apex is occupied by broken fragments of aeneous coloring without order, the two or three outside vittæ, above mentioned, are connected with a very narrow basal aeneous margin, and there is also a lateral vitta from near the humerus to within one-quarter of the apex, body below greenish bronze, feet yellow with viridi-aeneous spot on the thighs. Length 8-9 mm.

One example, Mexico, also one among the unnamed Jacoby material marked "Coll. R. Stuhimann 16 XI 1895 (viri-di-collis separate label)." Separate label in Jacoby's writing.

The second specimen varies from the type in having the humeral vitta broken and the oblique streak indicated by spots, and the broken fragments behind are still more divided. The sides of the thorax are rounded and the anterior angles pointed, the elytral punctures are moderately coarse, obsolete at the apex and almost entirely confined to the aeneous markings, the third interspace is wider than the rest. The junction of the oblique streak with the subsutural vitta forms a noticeable spot, the vittæ in front of the oblique streak are limited by punctures like a *Calligrapha*, but the crossing of the streak seems to break all order. Resembles some forms of *dilecta* Stål, but the punctuation of the elytra in *dilecta* is much more general and diffused, and none of my specimens of *dilecta* have anything approaching the broken rear markings of *similis*.

Among the unnamed Jacoby material was a specimen marked by him "n. i. m." (not in museum) which seem to be a curious aberration of *Leptinotarsa Ståli* Jac. it is precisely like typical *Ståli* except that the large angulated spot at the rear side and the small jog off the sutural vitta near the apex, are both indicated only by dots at the anterior angles—without typical forms for comparison it would pass as an undescribed form.

Mr. Wickham in one of his trips has taken *Leptinotarsa dahlbomi* Stål at the Rio Balsas and Apipilulco in Guerrero and also at Cuernavaca; new localities to me for this species.

Leptinotarsa vittipennis nov. sp.

Head and thorax dark shining metallic green, labrum rufescent, antennæ dark, punctuation of the head moderate and uniform, diffuse on the thorax and coarser at the sides, scutel dark, elytra dark flavous, coarsely, diffusely punctate, except on the disk where it is semi-regular with a common sutural vitta which is suddenly widened just before the middle and abruptly narrowed after the middle, to a thin line which attains the apex; a broad (about 1 mm.) oblique vitta from the humerus to a point about one-third from the apex, but only attaining the convexity, and a small elongate subbasal spot between the two vitta, all of which are the color of the thorax, body below and legs dark greenish black. Length 9 mm.

One example, Peru, pale green label (Marcapata?).

The suddenly narrowed sutural vitta and the broad oblique humeral stripe make this a conspicuous form. The antennæ are long and approach the form of *Prosicela*, but the outer joints are widened; the surface of the thorax is polished and the punctures rather sparse except on the rear edge; there is a well marked quasi arcuate fovea near the hind angle, the punctuation of the elytra is moderately coarse and diffuse except for a few short striæ on the disk.

Desmogramma semifulva nov. sp. (Jac. in litt.).

Head and thorax sanguineous, moderately punctured, labrum blackish, antennæ black, basal joints rufous, scutel black, elytra dull greenish black, moderately punctate striate, the third, fifth and ninth intervals and the basal margin light flavous, the light intervals wider than the others, the ninth the widest of all, all three joining just before and then reaching the apex, body beneath and legs dark black green, coxæ rufous. Length 7 mm.

Two examples, Callanga, Peru.

This species is labelled *semifulva* Jac. as I am unable to find the description I give the above, the elytral striping much resembles *Ljunghi* Stål or *Nigripes* Jac., but the bright red thorax and the dull black of the elytra in conjunction with the light vittæ distinguish it. The punctuation of the thorax is as usual a little thicker and coarser at the sides which are rounded with pointed anterior angles; the elytral punctures are fine, and the dark surface noticeably dull shiny.

Desmogramma jacobyi nov. sp.

Head and thorax dark, dull green bronze, labrum tinged with rufous, antennæ of the same dark green with rufous basal joints below, punc-

tuation sparse except at the sides of the thorax where it is more evident but not crowded, scutellum aeneous, elytra strongly and regularly punctate striate, aeneous bronzy black, with the third, fifth, seventh and ninth intervals as well as the basal margin flavous, the fifth and seventh joining at the rear of the convexity, the third and ninth joined near the apex and continued to it, body beneath and legs dark shining black green. Length 7-8 mm.

Two examples, St. Catarina Lüderwaldt, also No. 420 marked "n. i. m." by Jacoby.

Comes near *polychordia* Er. but with one less flavous vitta. The sides of the thorax are nearly straight behind and the surface is noticeably dull, the color of the elytra is brown and the thorax is greenish, the light vittæ are wider than the dark spaces, and the ninth noticeably the widest of all, the sutural dark stripe is hardly contracted at the base, but becomes attenuated at the apex, which is attained by the conjunction of the flavous vittæ.

***Desmogramma buckleyi* nov. sp.**

Head black, dull shiny, rather thickly punctate, labrum rufescent, antennæ black with basal joints rufous, thorax black shining, punctures coarse and crowded at the sides becoming sparse and fine on the disk, scutellum black, obsoletely channelled behind, elytra black, sparsely gray sericeous, coarsely and diffusely punctate, punctures crowded at the sides and somewhat obsolete behind, and more sparse on the disk, each elytra with two red spots, one basal median, the other subsutural post median, body beneath and legs black. Length $7\frac{1}{2}$ mm.

One example, Ecuador (Buckley), unnamed in the first Jacoby coll.

Nearly allied to *rufofasciata* Kirsch but the anterior elytral spot in place of being transverse and almost median is small, somewhat elongate longitudinally and strictly basal, the rear spot is smaller and more rounded. The thorax is distinctly foveate depressed in the coarsely punctate area at the sides, the lateral edge is parallel behind, abruptly rounded in front and with sharp pointed anterior angles, the thorax is less punctured than in *rufofasciata*, and in the latter species the elytral punctures are much more uniformly coarse and crowded, the apex of the elytra is absolutely rufescent.

Desmogramma reticulata nov. sp.

Head and thorax dull bronzed green, the labrum and base of the antennæ rufescent, punctuation moderate and sparse, the thorax depressed laterally, anterior angles finely refescent, scutel of the same bronzed green, elytra bright shining rufous, moderately punctate striate, confused at the sides and behind, each with a common sutural stripe narrowed behind, an elongate humeral spot, a transverse irregular median band sometimes not attaining the suture and an elongate irregular post median spot, greenish black, body beneath and legs dark greenish black. Length $7\frac{1}{2}$ mm.

Two examples, Colombia, first Jacoby coll.

The shape and size of *rufofasciata* Kirsch. The sides of the thorax are nearly straight behind, moderately rounded in front, the front angles not produced, the lateral fovea of the thorax is vague and more median than usual: in one specimen the humeral mark touches the median band, the rear mark does the same, the effect being to make two large basal rufous spots near the suture, another at and surrounding the humerus and two submedian (ill-defined behind), side by side, specimens probably occur where the whole surface is divided into rufous spots. It is the only red spotted species known to me where the elytra are smooth polished.

Desmogramma santos nov. sp.

Ovate parallel; head dull alutaceous black with labrum and antennæ dull yellow, thorax the color of the head with a few scattered punctures, especially noticeable at the sides which have a small well-marked fovea, scutel dull black, elytra dull flavous finely striate punctate, obsolete behind with a common broad sutural vitta, a subbasal transverse fascia, obsolete back of the shoulder, a similar sub-median fascia, semi-obsolete near the suture and the apex broadly excepting the extreme tip, all dull alutaceous black, below with legs shining black, except that the transverse black bands are carried round and include their proportionate share of the epipleuræ. Length $8\frac{1}{2}$ mm.

One example, Epirito Santo, Staud., '98, among unnamed material of Jacoby collection.

Somewhat resembles *Metastyla nigrofasciata* Stål. The anterior angles of the thorax are much produced and together with the whole lateral edge much thickened, the scutel and immediately about it is semi-shining all the remainder of the upper surface is dull, the black apical area bears a round yellow spot at the apex; the black bands do not have clear cut edges, but rather the reverse.

Desmogramma unicolor nov. sp.

Elongate, parallel, aeneous bronzed. Head and thorax smooth semi-shiny, a few obsolete depressions on either side of the latter, which has almost straight sides, with anterior angles elongate and obtuse, elytra barely wider than the thorax, with very finely punctulate striæ which are barely discernable at the sides and rear, the shoulder knobs are semi-prominent and semi-sulcate within, the elytra are markedly declivous behind after the manner of *D. ludicra* Stål and *obliqua* Stål, beneath and legs shining bronzy black. Length 10 mm.

One example, Naranja, Nicaragua.

Owing to the very divergent claws I have some doubt about placing this form in *Desmogramma*, but the truncate prosternum, which is so characteristic, finally decided me to locate it here, at least for the present; the shape and uniform color will at once distinguish it, the few punctures adjoining the scutel are more evident than the others.

Desmogramma callangaensis nov. sp.

Head and thorax dark bronzed green, labrum, mouth parts and antennæ rufous. Head with a few scattered punctures, thorax moderately and rather sparsely punctate on the disk, more frequent at the sides, elytra regularly and rather heavily punctate striate, blue bronze, with the third and ninth interval and the basal margin almost to the scutel flavous, the two intervals uniting near and then extending to the apex, body beneath blue black, legs rufous. Length 7 mm.

One example, Peru (green label Callanga or Marcapata?), one La Merced, Peru.

Very near *biva* Germ. but separated by the rufous legs and antennæ; the specimens were among the Jacoby beetles and placed by him as *bivittata* Lj. This latter species and *bisbivittata* Stål do not have the basal margin flavous, *conjugata* Stål is dull rufous bronze with much finer punctures and is confined apparently to Colombia and Venezuela, *fastidita* Stål has a dull alutaceous finish, while *bigaria* Er. and *bivia* Germ. both have dark legs and antennæ. The sides of the thorax are straight behind, with the anterior angles acutely produced—the third interval is narrowed behind.

Desmogramma foveicollis nov. sp.

Head and thorax dull rufous sanguineous, finely and sparsely punctulate, mouth parts and antennæ blackish rufescent, thorax with a

large deep fovea each side of the middle and an additional small one between it and the lateral anterior edge, scutel flavous, elytra very finely punctulate striate, dull flavous, the suture and alternating interspaces including the margin narrowly black vittate, below with legs, aeneous, blackish, rufescent. Length $7\frac{1}{2}$ mm.

One example, St. Catharina, Brazil (ex Klages).

Allied in marking to *polychordia* Er. The thorax is noticeably much thickened on the sides, which are straight behind; much rounded, in fact, almost angulate in front, and with the anterior angles short and pointed. The elytra striæ are very fine, in longitudinal depressions so that the intervals appear raised, giving the elytra a sulcate appearance, the sutural vitta vanishes at about the apical third, the subsutural and marginal almost attain the apex, the second and fourth (counting on the disk) are a little shorter and the third ends at the apical third—easily separated by the sulcate appearing elytra and foveate thorax—the second flavous interspace is noticeably swollen and protuberant at the base, and all the spaces both yellow and black appear as if ridged in middle.

***Desmogramma brunneo-maculata* nov. sp.**

Head, thorax, antennæ, legs and underside dark brownish-black, the antennæ and mouth parts somewhat rufous, head and thorax sparingly punctate, the latter a trifle more so at the sides, scutel brown-black, elytra dark orange fulvous red, with a common sutural vitta covering the second interspace, and the lateral margin dark brown, also on each elytra at anterior third two small indefinite brown dashes on the fourth and sixth intervals, also behind the middle on the same intervals two other dashes of similar color, the outer much longer and stronger. Length 8 mm.

One example, Venezuela.

The sides of the thorax are almost uniformly rounded and the anterior angles short and pointed. The stria of the elytra are fine and regular, except 5-6 is broken in the middle with closed ends; the apex is practically fulvous, the extension of the black vitta showing only a faint blackish streak, the lateral brown vitta extends only to the tenth stria of punctures.

***Desmogramma ignotus* nov. sp.**

Head and thorax pale rufous (antennæ broken) punctuation of the head fine, thoracic punctures coarse and scattered on the disk, gross

and semi-confluent at the sides which are thickened and swollen, scutel smooth rufous, elytra finely and regularly punctate striate, partially obsolete behind, flavous, each with the suture and the third, fifth, seventh and ninth intervals pale rufous (like the thorax) beneath with legs pale rufous. Length 9 mm.

One example without locality label in the first Jacoby coll. (north part of North America?).

Very much resembling in appearance *Stilodes* (*Deutero-campta*) *fuscolineata* Stål, but the heavily punctured and swollen thoracic edges together with the prominent and truncate prosternum at once separates it. The sides of the thorax are rounded almost from the rear, the anterior angle is elongate, but not mutic, the disk is a little depressed at the anterior middle, but there is no fovea, the elytra are convex and polished, the third and fifth rufous intervals attain the base or very closely, all become more or less obsolete towards the apex. The fifth stops at the posterior quarter, the third and seventh faintly join near the apex, the first three flavous interspaces have a single line of punctures in the middle, becoming obsolete at the rear; the general form is narrowed toward the rear.

***Zygogramma clavareau* nov. sp.**

Elongate parallel, head and thorax dirty flavous with the edges and centre indefinitely rufous, antennæ flavous, with the last four or five joints dark, jaws black, a few medium punctures on the front, thorax dull, a few fine punctures on the disk, and very coarsely and somewhat confluent punctate towards the lateral margin, which is thickened and smooth, scutel rufous, elytra dirty dull flavous with the suture and alternating interspaces rufous, limited by strong punctures of a somewhat darker color, none of the rufous vittæ attain the base, the first or subsutural attains the apex, the second ends on the convexity, the third is undulated just behind the middle and almost broken near the apex where it undulates again and joins the first vitta, the last vitta is straight and obsoletely attains the apex, the undulation of the third vitta makes a suddenly wider interval which is very noticeable, the first and second vittæ are also obsoletely undulated in keeping with the third, the various flavous intervals show punctures more or less arranged in lines of which one of the most noticeable is the subhumeral; body below and legs rufous. Length 5-5½ mm.

Two examples among the Jacoby material and ten others sent me by Monsieur Clavareau, all but one labelled Mexico

(light shiny green paper label). The amount of punctuation and amount and degree of rufous coloring vary considerably, and in some of the specimens the rufous vittæ all fall short of the apex, but all have the noticeable dilated area between the third and fourth vittæ, some examples have the front of the head quite thickly punctate, the rear edge of the thorax strongly punctate, and scattered strong punctures on the various elytral intervals at the sides.

***Zygogramma lineatipennis* nov. sp.**

Head, thorax, body below and legs dark, dull, greenish bronze, antennæ the same, more or less rufous near the base, head with a few fine punctures, thorax sparsely and very finely punctulate on the disk, coarsely, but not densely on the sides, scutellum shining black, elytra stramineous, the suture infuscate in the anterior half, each elytra with nine rows (excluding the short sutural) of dark punctures impressed in a dark line, joined in pairs 1-2, 3-4, 5-6, the second pair the shortest, reaching the middle of the posterior half; none reach the base. Length 6 mm.

Three examples, Miranda (Andreer).

The sides of the thorax are nearly straight behind, the anterior angles are moderately prolonged, and each side of the disk shows an obsolete fovea. The third interval on the elytra cuts off the next two pairs of striae, giving a regular look to the striation; should be placed near *deleta* Stål.

My two examples of *Zygogramma curvato-lineata* Jac. come from British Guiana and differ from the described type by having all of the three (in place of two) anterior short stripes connected together behind by a transverse band which is attached to the sutural vitta, also the exterior curved line at the rear, lacks only about one-third of a complete circle; the general form is almost that of *Elytrosphæra*—the type is described from Costa Rica.

Among the specimens labelled *Cosmogramma Ida* Stål in the first Jacoby collection I have detected a specimen of *Zygogramma decora* Stål var b, unfortunately only labelled Brazil; its purplish sericeous elytra with narrow flavous vitta makes it a very handsome thing. It is the only example I have seen and seems rare in collections.